COUNTRY USSR

SUBJECT 1. New Welding

2. New Motor 011

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PLACE ACQUIRED DATE OF IN DATE DISTR. 3 Mar 1949

NO. OF PAGES 2

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SUPPLEMENT TO REPORT NO.

## New Welding Technique

- 1. In May 1947, a high speed electric welder\* which was very efficient was being used by the Voroshilov Shipbuilding Yard of the Soviet Far Eastern Fleet in Vladivostok. The chief characteristic of this welder and the basic difference between it and other welders is that, by the use of a special gramular "solvent", the composition of which is unknown, a bare welding rod instead of a coated rod is used as the electrode of the welder.
- 2. The inventor (sic) of the welder is a Soviet engineer by the name of Busyuteto (sic).
- The following is a description of how this electric welder operates: The "solvent" is automatically distributed along the seam to be welded, and a steel welding rod is placed in the "solvent". The "solvent", when melted and heated by the electric arc, completely envelops the rod and eliminates the intense glare of the arc that would otherwise be present. The "solvent", moreover, concentrates the heat of the electric arc on the area to be welded, thus effecting a minimum loss of heat. The "solvent" also protects the molten metal from oxidation and impurities in the air. The welding rod is fed into and carried along the seam to be welded by an automatic adjustment. Because the whole operation is automatic, a strong electric current is used; and, because there is a minimum loss of heat in the welding process, the welding can be done at a very high speed.
- In the shops where this welder is used there is no need for welding helmets or shields or for a special ventilation system. It is possible to weld a sheet of metal 40 millimeters thick in one operation with this welder. The average welding speed for thin sheet metals using this welder is about 500 meters per hour.
- 5. There is also a smaller welder, which can be attached to a three-wheel cart, operating on the same principle. The small welder can weld a 10 mm. sheet of metal at about one-sixth the speed of the larger welder, while it takes from eight to ten operations to weld an ordinary sheet of metal 40 mm. thick.

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5. A sotal of 25 transformers, each with an output of 1.500 - 2.000 amperes, have Gara hashalled et the Woroshilov factory to facilitate the use of the control religers.

## Hew Motor 011

- 7. Physittine, a new type of motor oil, is being manufactured in considerable condition at the oil plant of the Visdivostok Aircraft Factory under the elementation of the Civil Air Fleet.
- 2. Ethersitine, which so bines the stability of a mineral oil with the superior intrinsing quality of a vegetable oil, is comparatively easy to manufacture, so it is obtained by treating castor oil with a simple (sic) heating process.\*\*
- 2. 1. a test, fluoritine maintained its jelly-like state after eleven hours at temperatures from -360 to -400 centigrade, while ordinary machine oils and caster oil were completely frozen after five hours at these temperatures. Sharritine also can be stored indefinitely without any apparent change in its properties.
- Fluoritime is mixed with ordinary lubricating cils. When the fluoritime content of the lubricating cil is two percent, the frictional loss in the engine is reduced to four-fifths of the frictional loss incurred when arctinery lubricating cils are used. The addition of fluoritime also increases the life of the lubricating cil in the motor and lowers the freezing temperature of the cil. In experiments conducted at the Vladivostok Aircraft Factory, it was found that, when fluoritime was added to ordinary lubricating cil in an automobile engine, the life of the cil was increased between 1,350 and 2,500 kilometers. In winter, automobiles with fluoritime added to the motor cil would turn over immediately no matter how long the readcle was left in the open at temperatures from -10° to -20° centigrade.
- 11. In June 1947, the production of fluoritime at the Vladivostok Aircraft Factory had reached forty metric tons per months.

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Comment: While the welding technique described is not new in the United States, it is significant that the USSR has now "invented" or adopted this method, which represents a definite advance in technology.

Comment: The simplicity of the process is doubted. However, the exact process is not known.

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